

Claims

- 1 A dispersion of a solid in an aqueous liquid, which includes as a dispersing agent, a polyalkylene glycol ester or amide of a fatty acid dimer and/or trimer.
- 5 2 A dispersion as claimed in claim 1 wherein the dispersing agent is of the formula (I):

$$[\text{Pol}]-(\text{COX})_m \quad (\text{I})$$
where
Pol is the residue of a polymerised fatty acid with (nominal) removal of the carboxylic acid groups;
10 m is 2 (for a fatty acid dimer) or 3 (for a fatty acid trimer); and
each X is independently OM, where M is:
a hydrogen atom, a cationic salt forming species, particularly an alkali metal atom or an amine (including quaternary amine) or ammonium group; or
a group $-(\text{AO})_n\text{R}^7$; or
15 a group $-\text{NR}^8-(\text{AO})_n\text{R}^9$:
where:
AO is an alkylene oxide residue, particularly an ethylene oxide or propylene oxide residue, and may vary along the chain;
n is from 1 to 100; and
20 R^7 is a hydrogen atom, a C_1 to C_{22} alkyl group, a C_2 to C_{22} alkenyl group, or an anionic group, which may include a charge balancing cation;
 R^8 is a hydrogen atom, a C_1 to C_{10} alkyl group, or a group of the formula $-(\text{AO})_n\text{R}^9$ where AO and n are independently as defined above and R^9 is independently as defined below; and
25 R^9 is a hydrogen atom, a C_1 to C_{22} alkyl group, or a C_2 to C_{22} alkenyl group, or an anionic group, which may include a charge balancing cation;
provided that at least one X is a group of the formula $-(\text{AO})_n\text{R}^7$ or $-\text{NR}^8-(\text{AO})_n\text{R}^9$.
- 2 A dispersion as claimed in claim 2 wherein the dispersing agent is a compound of one the formulae (Ia), (Ib) or (Ic):
30
$$[\text{Pol}]-(\text{COO}-(\text{AO})_n\text{R}^7)_m \quad (\text{Ia}); \text{ or}$$

$$[\text{Pol}]-(\text{COO}-\text{NR}^8-(\text{AO})_n\text{R}^9)_m \quad (\text{Ib}); \text{ or}$$

$$[\text{Pol}]-(\text{COO}-\text{N}((\text{AO})_n\text{R}^9)_2)_m \quad (\text{Ic})$$
where: Pol, AO, R^7 , R^8 , R^9 n and m are as defined in claim 2.
- 3 A dispersion as claimed in claim 3 wherein AO is an ethylene oxide residue and R^7 and R^8
35 are each C_1 to C_4 alkyl groups.

- 4 A dispersion as claimed in any one of claims 1 to 3 wherein the solid dispersed is at least one of: pigment; dye; dirt or soil particles; particulate ceramic material; magnetic material; extender or filler; optical brightener; textile auxiliary; drilling mud solids; personal care component; or agrochemical component.
- 5 5 A dispersion as claimed in any one of claims 1 to 3 wherein the solid dispersed is or includes a physical sunscreen.
- 6 A dispersion as claimed in claim 5 wherein the physical sunscreen is a titanium dioxide or zinc oxide physical sunscreen.
- 7 A dispersion as claimed in any one of claims 1 to 3 wherein the solid dispersed is or includes
10 an inorganic or organic pigment or dyestuff and/or carbon black.
- 8 A dispersion as claimed in claim 7 wherein the inorganic pigment is at least one of titanium dioxide, zinc oxide, Prussian blue, cadmium sulphide, iron, vermillion, ultramarine, chrome pigments, including chromates, molybdates and mixed chromates and sulphates of lead, zinc, barium, calcium; and the organic pigment is at least one of azo, disazo, condensed
15 azo, thioindigo, indanthrone, isoindanthrone, anthanthrone, anthraquinone, isodibenzanthrone, triphendioxazine, quinacridone and phthalocyanine pigments, lakes of acid, basic and mordant dyes.
- 9 A dispersion as claimed in any one of claims 1 to 3 wherein the solid dispersed is or includes an extender or filler.
- 20 10 A dispersion as claimed in claim 9 wherein the extender or filler is at least one of talc, kaolin, silica, barytes or chalk.
- 11 A dispersion as claimed in any one of claims 1 to 3 wherein the solid dispersed is or includes a particulate ceramic material.
- 12 A dispersion as claimed in claim 11 wherein the particulate ceramic material is at least one of
25 alumina, silica, zirconia, titania, silicon nitride, boron nitride, silicon carbide, boron carbide, mixed silicon-aluminium nitrides or a metal titanate.
- 13 A dispersion as claimed in any one of claims 1 to 3 wherein the solid dispersed is or includes dirt or soil particles and the formulation additionally includes at least one detergent.
- 14 A dispersion as claimed in claim 11 wherein the detergent is an anionic, nonionic, ampholytic
30 or zwitterionic detergent or a mixture of more than one such type of detergent and the formulation additionally includes at least one builder and/or bleach and/or enzyme.
- 15 A dispersion as claimed in any one of claims 1 to 3 wherein the solid dispersed is or includes an active agrochemical.
- 16 A dispersion as claimed in any one of claims 1 to 3 in the form of an agrochemical

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suspoemulsion including an agrochemically active material which is dispersed in a first liquid, particularly an aqueous, component, a second liquid component being emulsified in the first liquid component.

- 17 A dispersion as claimed in either claim 15 or claim 16 wherein the active agrochemical is one
5 or more plant growth regulators, herbicides, and/or pesticides.